

Notice of Allowability	Application No.	Applicant(s)	
	10/769,877	BROWN ET AL.	
	Examiner	Art Unit	
	Elias Desta	2857	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to application filed on February 03, 2004.
2. ☒ The allowed claim(s) is/are 20-28.
3. ☒ The drawings filed on 03 February 2004 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

Detailed Action

1. The examiner acknowledges the cancellation of claims 1-19 in the fee transmittal of the new application.

Allowance

2. Claims 20-28 are allowed. The following is an examiner's statement of reasons for allowance:

In reference to claim 20: Griffith et al. (U.S. Patent 4,081,995) teaches an apparatus for measuring revolution rate of a rotating gear or crankshaft (see Griffith et al., Abstract). The apparatus includes:

- A memory coupled to the edge detector (see Griffith et al., Fig. 5, member 54, previous period holding register), the memory configured to receive from the edge detector the plurality of pulse values, the memory being configured to store the plurality of pulse values with time content or as a function of time; and
- A pulse-input source is coupled to the edge detector as shown in Fig. 5, and then the edge detector is connected to the memory. The pulse-input source is configured to measure the reference pulses and provides a means to measure the pulse-to-pulse difference based on the reference values (see Griffith et al., column 8, lines 19-21)

The claimed invention provides a pulse-input measurement system having at least three redundant subsystems, each subsystem having:

- An input filter network configured to receive an input signal to produce a filtered signal;
- A comparator coupled to the input filter network, the comparator configured to receive the filtered signal and produce a comparator signal; and
- An input-output controller coupled to the comparator, the input-output controller configured to receive the comparator signal and produce a pulse-to-pulse delay value.

Unlike the arrangement in Griffith et al., the memory with the claimed invention is directly tied to the two source signals and as well as time variables. The time values are used to compute the pulse-to-pulse delays based on prior knowledge of the pulse sequence, whereas Griffith et al. teaches time difference between two pulses without any consideration of a pulse delay factor.

The remaining claims 21-28 are dependent upon claim 20 and contain further limitations.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should

preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant disclosure.

- Rowland et al. (U.S. Patent 6,535,811) teaches system and method for real-time electronic engine control.
- Tanaya et al. (U.S. Patent 6,427,662) teaches knock control apparatus for internal combustion engine.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elias Desta whose telephone number is (571)-272-2214. The examiner can normally be reached on M-Thu (8:30-7:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marc S. Hoff can be reached on (571)-272-2216. The fax phone numbers for the organization where this application or proceeding is assigned are (703)-308-5841 for regular communications and After Final communications.

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Art Unit: 2857

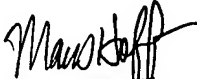
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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)-308-1782.

Elias Desta
Examiner
Art Unit 2857

-ed

July 6, 2004


MARC S. HOFF
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800